

SPACE OPERATIONS CONTROL CENTER SATELLITE SITUATION REPORT

VOL. 4, NO. 23

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GODDARD SPACE FLIGHT CENTER

GREENBELT, MD.



*Assigned
Kilburn*

FACILITY FORM 622

SPACE OPERATIONS CONTROL CENTER
GODDARD SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

VOLUME 4 NO. 23

DECEMBER 15, 1964

SATELLITE SITUATION REPORT

THE FOLLOWING REPORT REFLECTS DATA COMPUTED AND COMPILED BY
THE GODDARD SPACE FLIGHT CENTER, NORAD AND SMITHSONIAN ASTROPHICAL
OBSERVATORY AS OF 1200Z ON NOVEMBER 30, 1964.

<u>OBJECTS IN ORBIT</u>									
<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>NODAL PERIOD</u>	<u>INCLI- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1958 LAUNCHES									
ALPHA 1	EXPLORER 1	004	US	1 FEB	104.4	33.18	1582	344	
BETA 1	ROCKET BODY	016	US	17 MAR	138.4	34.25	4317	652	
BETA 2	VANGUARD 1	005	US	17 MAR	134.0	34.23	3945	643	108.012 &
1959 LAUNCHES									
ALPHA 1	VANGUARD 2	011	US	17 FEB	125.4	32.89	3284	557	
ALPHA 2	ROCKET BODY	012	US	17 FEB	129.7	32.89	3647	566	
ETA 1	VANGUARD 3	020	US	18 SEP	129.8	33.33	3716	512	
MU 1	LUNIK 1	112	USSR	2 JAN	HELIOCENTRIC ORBIT				
NU 1	PIONEER 4	113	US	3 MAR	HELIOCENTRIC ORBIT				
IOTA 1	EXPLORER 7	022	US	13 OCT	101.1	50.34	1076	549	
IOTA 2	ROCKET BODY	023	US	13 OCT	100.9	50.30	1051	552	
1960 LAUNCHES									
ALPHA 1	PIONEER 5	027	US	11 MAR	HELIOCENTRIC ORBIT				
BETA 1	ROCKET BODY	028	US	1 APR	99.1	48.41	741	691	
BETA 2	TIROS 1	029	US	1 APR	99.2	48.40	742	697	
BETA 3	NONE	101	US	1 APR	97.9	48.49	700	613	
BETA 4	NONE	115	US	1 APR	99.9	48.16	802	703	
GAMMA 2	TRANSIT 1B	031	US	13 APR	93.8	51.25	579	344	
GAMMA 4	NONE	099	US	13 APR	96.7	51.27	726	478	
EPSILON 3	NONE	036	USSR	15 MAY	90.8	64.97	368	260	
ZETA 1	MIDAS 2	043	US	24 MAY	94.3	33.04	497	469	
ETA 1	TRANSIT 2A	045	US	22 JUN	101.6	66.71	1059	612	
ETA 2	GREB	046	US	22 JUN	101.6	66.70	1058	611	
ETA 3	ROCKET BODY	047	US	22 JUN	101.4	66.70	1037	613	
ETA 4		840	US	22 JUN	101.5	66.69	1057	608	
ETA 5		841	US	22 JUN	101.5	66.71	1051	610	

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>NODAL PERIOD</u>	<u>INCL- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1960 LAUNCHES (CONT'D)									
IOTA 1	ECHO 1	049	US	12 AUG	114.1	47.27	1566	1265	
IOTA 2	ROCKET BODY	050	US	12 AUG	118.1	47.25	1681	1501	
IOTA 3	METAL OBJECT	051	US	12 AUG	118.2	47.26	1679	1524	
IOTA 4	METAL OBJECT	052	US	12 AUG	CURRENT ELEMENTS NOT MAINTAINED				
IOTA 5	METAL OBJECT	053	US	12 AUG	118.4	47.27	1682	1538	
NU 1	COURIER 1B	058	US	4 OCT	107.0	28.29	1208	967	
NU 2	ROCKET BODY	059	US	4 OCT	106.6	28.22	1210	921	
XI 1	EXPLORER 8	060	US	3 NOV	112.3	49.96	2245	418	
XI 2	ROCKET BODY	062	US	3 NOV	111.9	49.97	2204	418	
XI 3	NONE	069	US	3 NOV	109.1	49.39	1972	400	
XI 4	NONE	105	US	3 NOV	110.5	50.50	2073	421	
PI 1	TIROS 2	063	US	23 NOV	98.2	48.53	735	613	
PI 2	ROCKET BODY	064	US	23 NOV	98.1	48.53	725	609	
PI 3	NONE	074	US	23 NOV	98.2	48.53	724	616	
PI 4	NONE	075	US	23 NOV	98.3	48.51	733	621	
1961 LAUNCHES									
ALPHA 1	SAMOS 2	070	US	31 JAN	94.7	97.40	545	467	
ALPHA 2	METAL OBJECT	079	US	31 JAN	94.6	97.41	539	465	
GAMMA 1	VENUS PROBE	080	USSR	12 FEB	HELIOCENTRIC ORBIT				
DELTA 2	ROCKET BODY	082	US	16 FEB	118.5	38.86	2584	643	
DELTA 3	NONE	085	US	16 FEB	CURRENT ELEMENTS NOT MAINTAINED				
KAPPA 1	EXPLORER 10	098	US	25 MAR	POSITION UNCERTAIN				
NU 1	EXPLORER 11	107	US	27 APR	107.9	28.77	1772	488	
OMICRON 1	TRANSIT 4A	116	US	29 JUN	103.8	66.83	996	884	150;400
OMICRON 2	INJUN-SR-3	117	US	29 JUN	103.8	66.82	998	882	
OMICRON 3-206**	METAL OBJECTS		US	29 JUN					
RHO 1	TIROS 3	162	US	12 JUL	100.4	47.91	828	726	

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>NODAL PERIOD</u>	<u>INCLIN- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1961 LAUNCHES (CONT'D)									
RHO 2	ROCKET BODY	165	US	12 JUL	100.3	47.92	813	735	
RHO 3	METAL OBJECT	166	US	12 JUL	98.8	47.94	803	603	
RHO 4	METAL OBJECT	167	US	12 JUL	102.0	47.85	931	774	
SIGMA 1	MIDAS 3	163	US	12 JUL	161.5	91.22	3593	3298	
SIGMA 3	METAL OBJECT	188	US	12 JUL	161.1	91.21	3559	3303	
SIGMA 4	METAL OBJECT	196	US	12 JUL	161.9	91.22	3580	3344	
UPSILON 1	EXPLORER 12	170	US	16 AUG	CURRENT ELEMENTS NOT MAINTAINED				
A DELTA 1	MIDAS 4	192	US	21 OCT	166.0	95.89	3750	3503	
A DELTA 3	METAL OBJECT	194	US	21 OCT	165.6	95.81	3733	3489	
A DELTA 4	METAL OBJECT	195	US	21 OCT	166.4	95.84	3791	3495	
A ETA 1	TRANSIT 4B	202	US	15 NOV	105.8	32.44	1104	954	
A ETA 2	TRAAC	205	US	15 NOV	105.8	22.43	1106	955	
A ETA 3	ROCKET BODY	204	US	15 NOV	105.6	32.44	1112	934	

1962 LAUNCHES

ALPHA 1	RANGER 3	221	US	26 JAN	HELIOCENTRIC ORBIT				
ALPHA 2	ROCKET BODY	222	US	26 JAN	HELIOCENTRIC ORBIT				
BETA 1	TIROS 4	226	US	8 FEB	100.4	48.33	837	714	
BETA 2	ROCKET BODY	227	US	8 FEB	101.4	48.14	945	699	
BETA 3	METAL OBJECT	228	US	8 FEB	99.5	48.42	765	700	
BETA 4	METAL OBJECT	229	US	8 FEB	100.3	48.30	847	698	
ZETA 1	ORB. SOL. OBS. 1	255	US	7 MAR	96.0	32.83	591	543	
ZETA 2	ROCKET BODY	257	US	7 MAR	96.0	32.83	579	554	
KAPPA 1		271	US	9 APR	153.0	86.67	3412	2785	
KAPPA 3		273	US	9 APR	152.6	86.68	3370	2796	
KAPPA 4		274	US	9 APR	153.3	86.67	3424	2802	
MU 2	ROCKET BODY	282	US	23 APR	HELIOCENTRIC ORBIT				
OMICRON 1	ARIEL 1	285	US/UK	26 APR	100.5	53.89	1176	388	
OMICRON 2	ROCKET BODY	288	US	26 APR	100.4	53.84	1162	391	

OBJECTS IN ORBIT

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	NODAL PERIOD	INCLI- NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)	
1962 LAUNCHES (CONT'D)										
A ALPHA 1	TIROS 5	309	US	19 JUN	100.5	58.11	974	588	\$136.590\$136.077	
A ALPHA 2	ROCKET BODY	311	US	19 JUN	100.4	58.10	972	582		
A ALPHA 3	METAL OBJECT	312	US	19 JUN	101.7	58.20	1087	596		
A ALPHA 4	METAL OBJECT	313	US	19 JUN	99.1	58.00	857	574		
A EPSILON 1	TELSTAR 1	340	US	10 JUL	157.8	44.80	5643	945		
A EPSILON 2	ROCKET BODY	341	US	10 JUL	157.6	44.79	5631	944		
A OMICRON 1		369	US	23 AUG	99.5	98.70	853	621		
A OMICRON 2		370	US	23 AUG	98.2	98.66	748	603		
A OMICRON 3		378	US	23 AUG	100.8	98.72	974	621		
A OMICRON 4		388	US	23 AUG	99.5	98.70	853	621		
A RHO 1	MARINER 2	374	US	27 AUG	HELIOCENTRIC ORBIT					
A RHO 2	ROCKET BODY	375	US	27 AUG	HELIOCENTRIC ORBIT					
A PSI 1	TIROS 6	397	US	18 SEP	98.7	58.32	710	687		
A PSI 2	ROCKET BODY	398	US	18 SEP	98.7	58.32	707	683		
A PSI 3	METAL OBJECT	399	US	18 SEP	99.4	58.42	768	690		
A PSI 4	METAL OBJECT	400	US	18 SEP	98.0	58.21	683	646		
B ALPHA 1	ALOUETTE	424	CANADA	29 SEP	105.5	80.47	1035	1000		
B ALPHA 2	ROCKET BODY	426	US	29 SEP	105.4	80.48	1030	1001		
B ALPHA 3	METAL OBJECT	510	US	29 SEP	105.4	80.50	1025	1000		
B ALPHA 4	METAL OBJECT	511	US	29 SEP	105.5	80.43	1042	994		
B GAMMA 1	EXPLORER 14	432	US	2 OCT	2157.9	33.60	96299	915		
B GAMMA 2#	ROCKET BODY	NNA	US	2 OCT	CURRENT ELEMENTS NOT MAINTAINED					
B ETA 1	RANGER 5	439	US	18 OCT	HELIOCENTRIC ORBIT					
B ETA 2	ROCKET BODY	440	US	18 OCT	HELIOCENTRIC ORBIT					
B KAPPA 1		444	US	27 OCT	130.9	71.42	4135	188		
B LAMBDA 1	EXPLORER 15	445	US	27 OCT	312.2	18.04	17413	307		
B LAMBDA 2#	ROCKET BODY	NNA	US	27 OCT	INSUFFICIENT OBSERVATIONS					
B MU 1	ANNA 1B	446	US	31 OCT	107.9	50.13	1180	1079	\$162\$324	

OBJECTS IN ORBIT

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	NODAL PERIOD	INCLI- NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)	
1962 LAUNCHES (CONT'D)										
B MU 2	ROCKET BODY	447	US	31 OCT	107.6	50.17	1162	1072	\$136.140;136.620	
B NU 3		450	USSR	1 NOV	HELIOCENTRIC ORBIT					
B TAU 1		502	US	13 DEC	108.6	70.37	2092	228		
B TAU 2	INJUN 3	504	US	13 DEC	112.2	70.34	2409	240		
B TAU 4		508	US	13 DEC	104.0	70.33	1655	227		
B TAU 5		513	US	13 DEC	108.5	70.30	2079	227		
B TAU 6		520	US	13 DEC	111.4	70.34	2342	237		
B UPSILON 1	RELAY 1	503	US	13 DEC	185.1	47.52	7440	1318		
B UPSILON 2	ROCKET BODY	515	US	13 DEC	184.9	47.70	7446	1296		
B CHI 1	EXPLORER 16	506	US	16 DEC	104.4	52.06	1178	752		
B PSI 1	TRANSIT 5A	509	US	19 DEC	99.1	90.64	737	695		
B PSI 2		514	US	19 DEC	97.7	90.76	728	570		
B PSI 3		519	US	19 DEC	99.1	90.65	735	696		
B PSI 4		523	US	19 DEC	100.2	90.50	837	701		
1963 LAUNCHES										
1963 03A		527	US	16 JAN	94.4	81.89	527	460	136.050	
1963 04A	SYNCOM 1	553	US	14 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1963 04B	ROCKET BODY	532	US	14 FEB	581.1	32.41	32339	697		
1963 05A		533	US	19 FEB	97.7	100.47	795	503		
1963 05B		534	US	19 FEB	97.7	100.48	796	503		
1963 05C		535	US	19 FEB	96.9	100.48	746	474		
1963 05D		536	US	19 FEB	98.3	100.49	838	522		
1963 08B		566	USSR	2 APR	BARYCENTRIC ORBIT					
1963 09A	EXPLORER 17	564	US	3 APR	94.6	57.63	744	256		
1963 13A	TELSTAR 2	574	US	7 MAY	225.3	42.76	10806	967		

OBJECTS IN ORBIT

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1963 LAUNCHES (CONT'D)								
1963 31A	SYNCOM 2	634	US	26 JUL	1438.0	32.25	35787	\$136.980 \$136.468 \$1814.069; \$1815.794 \$1820.177
1963 31B	ROCKET BODY	625	US	26 JUL	CURRENT ELEMENTS NOT MAINTAINED			
1963 38A		669	US	28 SEP	107.1	89.92	1115	1071
1963 38B		670	US	28 SEP	107.4	89.91	1143	1069
1963 38C		671	US	28 SEP	107.3	89.91	1136	1074
1963 38D		672	US	28 SEP	107.3	89.95	1136	1174
1963 38E		745	US	28 SEP	107.1	89.94	1112	1073
1963 39A		674	US	17 OCT	6481.8	38.06	116322	101237
1963 39B		675	US	17 OCT	2319.4	35.90	102371	953
1963 39C		692	US	17 OCT	6595.5	37.04	116483	103761
1963 42B		682	US	29 OCT	91.7	89.98	434	277
1963 43A	POLYOT 1	683	USSR	1 NOV	102.3	58.93	1402	336
1963 43B		684	USSR	1 NOV	100.6	58.63	1236	336
1963 43C		685	USSR	1 NOV	97.4	58.97	972	298
1963 43D		686	USSR	1 NOV	100.3	59.79	1211	329
1963 46A	EXPLORER 18 CENT. UR 2	693	US	27 NOV	5602.3	36.40	192354	3865
1963 47A		694	US	27 NOV	107.8	30.36	1770	479
1963 47B		696	US	27 NOV	107.3	30.06	1614	582
1963 47C		697	US	27 NOV	107.5	30.07	1634	583
1963 47D		698	US	27 NOV	108.0	29.92	1657	612
1963 47E		699	US	27 NOV	108.6	30.44	1752	572
1963 47F		700	US	27 NOV	108.7	30.46	1734	591
1963 47G		701	US	27 NOV	107.8	30.01	1642	608
1963 47H		739	US	27 NOV	105.9	30.39	1584	486
1963 49A		703	US	5 DEC	106.8	89.95	1095	1065
1963 49B		704	US	5 DEC	107.1	89.95	1124	1066
								150;400

OBJECTS IN ORBIT

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1963 LAUNCHES (CONT'D)									
1963 13B	ROCKET BODY	575	US	7 MAY	225.1	42.76	10787	969	
1963 14A		574	US	9 MAY	166.4	87.34	3670	3621	
1963 14B		579	US	9 MAY	166.4	87.11	4019	3274	
1963 14C		608	US	9 MAY	166.4	87.36	3654	3636	
1963 14D		589	US	9 MAY	CURRENT ELEMENTS NOT MAINTAINED				
1963 14E		602	US	9 MAY	166.1	87.35	3646	3617	
1963 14F		628	US	9 MAY	166.8	87.36	3683	3639	
1963 14G		629	US	9 MAY	166.4	87.36	3666	3623	
1963 14H		702	US	9 MAY	166.4	87.34	3660	3630	
1963 17A		580	USSR	22 MAY	91.9	48.98	489	241	
1963 17C		582	USSR	22 MAY	93.3	49.20	539	318	\$150\$400
1963 22A		594	US	16 JUN	99.7	90.01	763	728	
1963 22B		603	US	16 JUN	99.7	90.01	765	725	
1963 22C		610	US	16 JUN	101.2	90.21	892	742	
1963 22D		611	US	16 JUN	98.1	89.83	770	571	
1963 24A	TIROS 7	604	US	19 JUN	97.4	58.23	644	627	136.234; 136.922
1963 24B	ROCKET BODY	605	US	19 JUN	97.3	58.24	639	625	
1963 24C	METAL OBJECT	606	US	19 JUN	97.9	58.37	680	634	
1963 24D	METAL OBJECT	607	US	19 JUN	96.9	58.09	638	582	
1963 25B		614	US	27 JUN	132.3	82.13	4109	337	
1963 26A	RESEARCH SATELLITE FOR GEOPHYSICS	612	US	28 JUN	102.1	49.72	1293	418	
1963 27A		613	US	29 JUL	94.7	82.32	521	488	
1963 30A		622	US	19 JUL	167.8	88.47	3727	3677	
1963 30B		635	US	19 JUL	167.8	88.44	3727	3673	
1963 30C		630	US	19 JUL	167.5	88.43	3717	3659	
1963 30D		624	US	19 JUL	167.8	88.27	4335	3064	
1963 30E		631	US	19 JUL	168.3	88.44	3780	3660	

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>NODAL PERIOD</u>	<u>INCL.- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1963 LAUNCHES (CONT'D)									
1963 49C		705	US	5 DEC	107.1	89.95	1121	1068	\$54; 162; 324; 648
1963 49D		706	US	5 DEC	107.1	89.97	1122	1061	
1963 49E		715	US	5 DEC	107.1	89.97	1121	1066	
1963 49F		753	US	5 DEC	107.1	89.97	1119	1071	
1963 53A	EXPLORER 19	714	US	19 DEC	115.5	78.65	2342	612	
1963 53B		721	US	19 DEC	115.8	78.61	2393	590	
1963 53C		722	US	19 DEC	115.8	78.59	2390	597	
1963 53D		723	US	19 DEC	115.9	78.58	2397	597	
1963 53E		724	US	19 DEC	115.9	78.65	2387	611	
1963 53F		725	US	19 DEC	115.9	78.62	2401	590	
1963 53G		726	US	19 DEC	115.8	78.61	2373	610	
1963 53H		732	US	19 DEC	115.8	78.61	2390	595	
1963 54A	TIROS 8	716	US	21 DEC	99.4	58.50	756	701	136.-33; 136.923
1963 54B		717	US	21 DEC	99.3	58.50	755	695	
1963 54C		720	US	21 DEC	101.1	58.47	923	696	
1963 54D		736	US	21 DEC	97.7	58.51	707	588	
1964 LAUNCHES									
1964 01A		727	US	11 JAN	103.4	69.92	932	913	
1964 01B	GGSE	728	US	11 JAN	103.4	69.92	932	913	
1964 01C	EGRS	729	US	11 JAN	103.4	69.91	932	912	136.804
1964 01D	SOLAR RADIATION	730	US	11 JAN	103.5	69.91	932	913	136.887
1964 01E		731	US	11 JAN	103.5	69.92	932	913	
1964 02A		733	US	19 JAN	101.3	99.07	852	789	
1964 02B		734	US	19 JAN	101.3	99.07	833	807	
1964 02C		735	US	19 JAN	101.3	99.09	833	811	
1964 03A	RELAY 2	737	US	21 JAN	194.7	46.31	7415	2085	136.621\$136.142

OBJECTS IN ORBIT

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1964 LAUNCHES (CONT'D)									
1964 03B		738	US	21 JAN	194.8	46.32	7422	2083	
1964 04A	ECHO 2	740	US	25 JAN	108.6	81.54	1210	1113	136.020;136.170
1964 04B		741	US	25 JAN	108.9	81.50	1309	1046	
1964 04C		742	US	25 JAN	108.8	81.48	1307	1042	
1964 04D		743	US	25 JAN	108.8	81.54	1313	1037	
1964 04E		749	US	25 JAN	98.3	81.59	1059	296	
1964 05A	SATURN 5	744	US	25 JAN	93.6	31.44	640	254	
1964 06A	ELEKTRON 1	746	USSR	30 JAN	169.3	60.85	7121	398	
1964 06B	ELEKTRON 2	748	USSR	30 JAN	1356.4	59.26	67589	834	
1964 06C		750	USSR	30 JAN	168.1	60.85	7028	398	
1964 06D		751	USSR	30 JAN	1384.1	59.36	68634	892	
1964 11A		759	US	28 FEB	94.6	82.07	515	488	
1964 11B		760	US	28 FEB	93.9	82.05	473	457	
1964 11C		761	US	28 FEB	94.0	82.08	483	459	
1964 15A	ARIEL 2	771	US/UK	27 MAR	100.7	51.66	1292	289	136.557
1964 15B		775	US	27 MAR	100.4	51.69	1262	286	
1964 15C		847	US	27 MAR	103.9	51.38	1512	370	
1964 16D		785	USSR	2 APR	HELIOCENTRIC ORBIT				
1964 19B	POLYOT 2	784	USSR	12 APR	92.0	58.06	456	292	
1964 26A		801	US	4 JUN	103.1	90.50	946	865	150;400
1964 26B		805	US	4 JUN	103.9	90.20	983	903	
1964 26C		806	US	4 JUN	102.3	90.83	952	787	
1964 26D		809	US	4 JUN	103.1	90.50	946	864	
1964 30A		811	US	13 JUN	91.2	114.99	341	326	

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>NODAL PERIOD</u>	<u>INCL-I- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FR.FQ. (MC/S)</u>
1964 LAUNCHES (CONT'D)									
1964 51A	EXPLORER 20	870	US	25 AUG	103.9	79.90	1022	868	\$136.680
1964 51B		871	US	25 AUG	103.9	79.91	1015	870	\$136.326;\$136.350
1964 51C		873	US	25 AUG	103.7	79.84	994	878	
1964 51D		874	US	25 AUG	103.7	79.84	1008	860	
1964 51E		875	US	25 AUG	103.7	79.82	1021	850	
1964 52A	NIMBUS 1	872	US	28 AUG	98.4	98.66	933	430	136.499
1964 52B		878	US	28 AUG	98.4	98.65	934	429	
1964 53A	COSMOS 44	876	USSR	28 AUG	99.5	65.08	866	606	
1964 53B		877	USSR	28 AUG	99.6	65.10	797	682	136.200\$400.250
1964 54A	OGO 1	879	US	5 SEP	3839.9	32.34	148408	1289	\$400.850
1964 60A	EXPLORER 21	889	US	4 OCT	2079.8	33.77	94825	362	136.147
1964 63A		893	US	6 OCT	106.3	89.91	1072	1043	
1964 63B		897	US	6 OCT	106.6	89.92	1080	1061	
1964 63C		900	US	6 OCT	106.6	89.94	1081	1058	
1964 63D		901	US	6 OCT	106.6	89.92	1080	1063	
1964 63E		902	US	6 OCT	106.6	89.93	1081	1061	
1964 63F		903	US	6 OCT	106.6	89.92	1081	1063	
1964 64A	EXPLORER 22	899	US	10 OCT	104.8	79.71	1080	889	136.170
1964 64B		907	US	10 OCT	104.7	79.69	1081	887	
1964 68B		914	US	23 OCT	90.7	95.50	324	295	
1964 69A	COSMOS 49	913	USSR	24 OCT	91.7	48.95	456	259	
1964 69B		915	USSR	24 OCT	91.3	48.93	416	250	
1964 72A		922	US	4 NOV	95.0	82.04	526	511	
1964 72B		925	US	4 NOV	94.9	82.04	524	508	
1964 72C		926	US	4 NOV	94.9	82.06	522	508	
1964 72D		927	US	4 NOV	94.9	82.03	523	509	

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>NODAL PERIOD</u>	<u>INCL- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1964 LAUNCHES (CONT'D)									
1964 31A		812	US	18 JUN	101.6	99.80	842	827	
1964 31B		813	US	18 JUN	101.6	99.80	842	828	
1964 31C		815	US	18 JUN	101.6	99.81	844	823	
1964 35A		824	US	2 JUL	94.9	82.08	529	498	
1964 36B		826	US	6 JUL	89.9	92.93	286	252	
1964 38A	ELECTRON 3	829	USSR	10 JUL	168.1	60.81	7028	399	
1964 38B	ELECTRON 4	830	USSR	10 JUL	1313.8	60.08	66133	584	
1964 38C		831	USSR	10 JUL	168.6	60.81	7061	398	
1964 38D		832	USSR	10 JUL	1341.3	60.17	67209	612	
1964 40A		836	US	17 JUL	6091.5	39.13	105169	103048	
1964 40B		837	US	17 JUL	6070.5	40.90	113125	94584	
1964 40C		838	US	17 JUL	2350.1	38.30	104024	319	136.771
1964 41B		843	US	28 JUL	BARYCENTRIC ORBIT				
1964 42A	COSMOS 36	844	USSR	30 JUL	90.9	49.00	395	242	
1964 45B		851	US	14 AUG	127.2	95.69	3735	264	
1964 46D		856	USSR	18 AUG	92.7	56.16	600	199	
1964 47A	SYNCOM 3	858	US	19 AUG	1436.5	.07	35799	35790	\$136.470\$136.980 \$1820.177\$1815.794 \$1814.931
1964 47B		862	US	19 AUG	694.5	16.80	38084	1113	
1964 48A		861	US	21 AUG	90.9	114.97	326	308	
1964 49D	COSMOS 41	869	USSR	22 AUG	714.8	65.20	39696	514	
1964 49E		898	USSR	22 AUG	716.1	65.29	39880	395	
1964 50A	COSMOS 42	864	USSR	22 AUG	96.9	48.97	992	228	
1964 50B		866	USSR	22 AUG	96.3	48.97	931	224	
1964 50C	COSMOS 43	867	USSR	22 AUG	96.9	48.97	986	229	

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>NODAL PERIOD</u>	<u>INCLI- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1964 LAUNCHES (CONT'D)									
1964 73A	MARINER 3	923	US	5 NOV	HELIOCENTRIC ORBIT				
1964 74A	EXPLORER 23	924	US	6 NOV	99.2	51.96	978	464	\$136.080\$136.857
1964 76A	EXPLORER 24	931	US	21 NOV	116.3	81.37	2489	539	136.710
1964 76B	EXPLORER 25	932	US	21 NOV	116.2	81.36	2496	528	136.292\$136.860
1964 76C		933	US	21 NOV	116.2	81.36	2495	531	
1964 76D		934	US	21 NOV	116.3	81.35	2496	539	
1964 76E		935	US	21 NOV	116.3	81.35	2501	535	
1964 76F		936	US	21 NOV	116.3	81.31	2488	548	
1964 76G		937	US	21 NOV	116.4	81.38	2504	538	
1964 76H		939	US	21 NOV	116.1	81.29	2474	536	
1964 76I		940	US	21 NOV	116.2	81.34	2492	528	
1964 76J		941	US	21 NOV	116.2	81.37	2490	528	
1964 77A	MARINER 4	938	US	28 NOV	HELIOCENTRIC ORBIT				
1964 77B		942	US	28 NOV	HELIOCENTRIC ORBIT				
1964 78C	ZOND 2	945	USSR	30 NOV	HELIOCENTRIC ORBIT				
1964 80A	COSMOS 51	947	USSR	9 DEC	92.6	48.76	537	261	
1964 80B		948	USSR	9 DEC	92.5	48.77	532	259	
1964 80C		950	USSR	9 DEC	92.0	48.74	454	256	
1964 80D		952	USSR	9 DEC	92.0	48.74	460	258	
1964 80E		954	USSR	9 DEC	92.0	48.77	450	257	
1964 80F		955	USSR	9 DEC	92.1	48.77	454	257	
1964 83A		953	US	13 DEC	106.0	89.99	1067	1019	
1964 83B		956	US	13 DEC	106.3	89.97	1074	1031	

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PLEASE ADD THE FOLLOWING TO THE DECAYED OBJECTS LIST:

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>DECAY</u>
1964 42B		845	USSR	30 JUL	29 NOV 64
1964 71A		921	US	2 NOV	28 NOV 64
1964 75A		930	US	18 NOV	06 DEC 64
1964 78A		943	USSR	30 NOV	01 DEC 64
1964 78B		944	USSR	30 NOV	02 DEC 64
1964 79A		946	US	04 DEC	05 DEC 64
1964 81A		949	US	10 DEC	13 DEC 64
1964 82A	CENTAUR 4	951	US	11 DEC	12 DEC 64

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